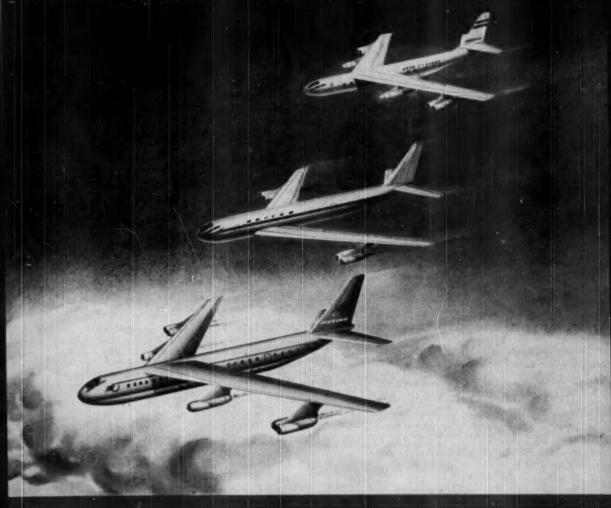
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COVER

A look into the future by the Boeing Airplane Company, representing studies of jat-propolled transports. Think what this will mean to shippers!

FASHIONS Over the Atlantic . . .



I. This Air France Constellation . . .



2. Brings a variety of cargo to New York . .



3. Among them creations for Korgère . . .



4. For sale in the Fifth Avenue store.



EON KARGERE, who has crossed the Atlantic about 125 times at an average of about eight round-trip flights a year, swears by air cargo as a progressive way of conducting his business. An important fashion creator, he imports his own creations from Paris for sale in his own store on Fifth Avenue, New York. Kargere recognizes the fact that if his creations reach the Paris airport in time to meet an outgoing Air France plane (barring customs clearance snarls), they can be in New York within 24 hours—a sure-fire way to withstand competition and fashion pirates. And here's how he ties in his promotion.



PAGE 6-Am TRANSPORTATION-Air Commerce

Guest Air Cargo Editorial No. 31

E. L. DARE

Manager of Cargo Sales

UNITED AIR LINES



N comments of this kind it's customary to salute air freight as the greatest boon to shippers since God created pack animals. I go along with that view most of the way, but I believe we have reached the point where tough-minded appraisals are more in order than extravagant accolades.

During the last five years air freight has boomed at a phenomenal rate, increasing 67-fold. This growth is the finest kind of tribute any industry can wish from its customers. It is this selfsame growth, often hectic and unguided, which unfortunately has obscured certain funda-

What is air freight? Primarily, it's a low-cost service designed to attract a steady flow of volume shipments. Is it the fastest and most economical way to ship by air? Not necessarily, since two other services—air parcel post and air express—hold specific advantages.

The fastest and most economical means of shipping packages by air depends on such variables as weight of the package; the speed desired to deliver it; the distance to be traveled and the necessity of expedited pick-up and delivery. Some shippers would do well to evaluate the advantages and functions of air express and air parcel post before rushing headlong into air freight.

Air parcel post provides overnight delivery to any point in the country for packages of not more than 70 pounds and 100 inches in combined length and girth. Such packages must be mailed at the Post Office. From then on they receive the same high priority accorded to air mail. And air parcel post packages are delivered to ultimate destinations at no added charge.

Shipments sent air express automatically receive doorto-door pick-up and delivery service. Packages are routed to any point in the country, using the fastest possible air or coordinated air-rail-truck schedules. Distribution is facilitated through 23,000 offices of the Railway Express Agency.

Air freight moves on an airport-to-airport basis, with pick-up and delivery service available at slight additional cost. At risk of being repetitious, I emphasize that it's a low cost service designed to attract volume shipments. The tendency to associate air freight with every package consigned aloft needs examination by shippers and more clarification by air cargo salesmen.

The time is at hand for air cargo salesmen to expand their activities as sales engineers. Thorough understanding of a client's business, his marketing problems, time limits and potentials, is demanded for well-rounded growth. Knowledge of this kind not only increases the salesman's horizon but redounds to the good of carrier and shipper.

My files hold numerous examples of how clients cashed in by using air transportation in speeding to markets where supply was slight and demand heavy. This is especially effective with style merchandise and agricultural products. Surprisingly large quantities of manufactured goods are also airborne on the same basis. The important thing is for air cargo salesmen to be so well saturated with trade lore and their own products that they can recognize and aggressively merchandise the air service that is most favorable for the client.

Lately there's been a tendency to disregard the debit side of the ledger in making rate reductions. Rates obviously should be fair to the shipper and no less fair to the carrier in terms of present standards of service and imminent improvements. Reductions geared to the idea that today's fast buck overshadows every other factor bear careful scrutiny.

Properly approached, rates should be part of an economic philosophy dedicated to providing shippers with first-class service. Makeshift equipment and get-rich-quick methods are excluded by this point of view. Low rates are no favor to the shipper, if they are accompanied by low standards of service.

Reductions may be justifiably motivated by one or more of the following objectives:

To develop a regular flow of volume shipments. To correct directional flows, such as the traditional East-West imbalance.

To aid the development of new markets.

Even when these considerations apply, reductions sometimes go further than apparent on the surface. You may, for example, reduce rates on a new commodity subject to so much specialized care in handling that steady entries on the debit side are inescapable. This is true at the moment of some items in both the hard and soft goods category.

Reductions that fail to estimate air freight as an industry highly competitive in terms of equipment and facilities are unrealistic. Air freight is by nature progressive and quick to adopt improvements. Technological changes to occur in the air transport industry within the next five

(Concluded on Page 16)

If Europe's producers will take the time to learn the facts of life of American merchandising . . . if they can learn that the key to the American market is to provide service with the same speed and flexibility as the American producer, then an avalanche of goods can ride on . . .

EUROPE'S AIR ROAD TO THE U. S. RETAILER

By NATHAN KATZ and SEYMOUR M. KWEREL

Merchandising and Management Counsel Formerly Executives with R. H. Macy and Company

THE big drive is on. Europe needs America's dollars. The United States needs European stability. Ergo: the United States steps up its imports.

But how?

The ECA is working feverishly on the problem. The President has appointed a super commission charged with the duty of coming up with an integrated program.

In the final analysis, however, the answer lies not with Government programs or subsidies. In a free enterprise economy, European manufacturers will have to earn their way into the American market. And they will never achieve any high degree of success until they have obtained a real insight into modern American retailing and adapted their methods to their new-found knowledge.

American retailing is high pressure. Its essence is speed, high turnover, rapid flexibility to quickly shifting market conditions. American stores like to have a sizeable "opon-to-buy". This means that they are reluctant to get too tied up with a heavy inventory in advance of the season. They like to feel out the market a while, see where the demand lies, then hop in and place orders for rapid delivery.

In practice, this type of operation often becomes uncomfortable even for the American manufacturer, and the business press is full of accounts of the tug-of-war between retailers and their resources (unamalacturers). Often

the manufacturers feel that undue burdens are placed on them, for they are thereby required to work feverishly at some periods, to be slack in others, or to assume the risks of building up a large inventory.

Sometimes the manufacturer's position is so strong with the consumer market that he can dictate some of the terms to the retailer. More often, however, the retailer is in the driver's seat and call the tune.

And one tune he is calling increasingly loudly in these competitive times is Service.

For European and other foreign manufacturers who wish to capture a growing share of the American market, this theme is of critical importance.

Off-Base Servicing

Up to now, foreign servicing of American retail needs has been largely in an entirely different realm than what the stores have come to expect from their domestic suppliers—and the United States' relatively low percentage of imports has been an excellent index of how far off base that servicing has been.

The American retailer cannot always count on his foreign resources to provide the quick deliveries and the rapid changes and services. Thus, to many an American buyer, the purchases he makes abroad are his most speculative ones. He usually must commit him-

self for them longer in advance, must buy a substantially larger proportion of the total he may want in his opening order, and must go into the season with the expectation that should the pattern of demand suddenly change, there will be relatively little be will be able to accomplish with his foreign supplier to keep up with it.

In these facts lie the problem and the opportunity of the foreign producer—a problem because he has the reticence of the American retailer to overcome; an opportunity, because the means are at hand for overcoming it.

Air transportation — international and intranational — is probably the greatest single weapon the foreign producer has at hand to equalize his position with the domestic producer in the American market.

By an ever-widening, judicious use of air transportation, the foreign producer can eventually come to give the same on-the-spot service to the American retailer as the domestic producer. He can bridge the gap in the American buyer's mind between the adaptability the American manufacturer has been offering him and the relative rigidity the foreign producer shows. In an air transportation era, he can be in the same relation to his market as any one else.

In specific terms, this means that he can send representatives to the scene as styles change. He can quickly follow

(Concluded on Page 22)

NE SHIPPER recently asked us quite innocently: "Do airfreighters really accommodate heavy, bulky shipments—the kind you have trouble fitting into boxcars?" Well, here's visual proof of a 7,000-pound truck, manufactured by the Four Wheel Drive Auto Company, Clintonville, Wisconsin, which was flown from New York to Cairo by Seaboard and Western Airlines. According to J. D. MacDonald, export manager of Four Wheel Drive, the truck was aboard a freight train bound for Newark when the Cairo dealer was notified by the purchaser that the vehicle must be in the Egyptian city within 10 days. Subsequent quantity orders depended on this. What to do? Shipment by steamer was out of the question. So that's where Seaboard came into play. Nine days from the time the truck left the factory it

reached Newark and was barged across the Hudson to Pier 19. Friday was deadline, and this was Tuesday morning. Following a minute inspection by Wallace P. Neth. Seaboard's traffic director, the truck's body was detached from the cab (the wheels had been removed earlier), and by nightfall the whole shebang had been transferred to Idlewild where a fork lift hoisted the cargo into an Airtrader and steel wire tiedowns lashed it to the aircraft floor. The plane took off at dawn Wednesday, zipped to Luxembourg (via Gander and Shannon) at which point there was a change of crew, and then completed the flight to Cairo after touching at Rome. When the sun rose in Egypt on deadline day, the Four Wheel Drive truck was safely in the capital city, ready for inspection and testing. Shippers are fast learning...

The Modern Way to Truck a Truck



"LIFT HER, BOYS"



"EASY NOW, EASY"

"OKAY, TIE HER DOWN"

United States Overseas Air Cargo Services

By N. W. KENDALL

Transportation Division
Office of Domestic Commerce
United States Department
of Commerce

PART II

Third, air express to and from continental United States before the war was transported almost exclusively in passenger-and-mail planes rather than in planes assigned to the carrier of cargo only. In a statement in 1944, the president of Panagra indicated that within the preceding two years that company had inaugurated the first allcargo commercial service operated by an American airline under Civil Aeronautice Board certification. As late as 1944, Pan American Airways, in presenting its postwar program for service to Latin America before the CAB, indicated that it had not included in its immediate plans any specific provision for special all-cargo planes, preferring to reduce rates on express moving in combination passenger-property service until a volume warranting all-cargo operations could be generated.

Finally, air cargo services between the United States and Latin America were handicapped by an unbalanced traffic flow pattern. Pan American stated in 1944 that, whereas out-bound and in-bound air passenger traffic over a period of years had been approximately the same, and in-bound airmail had approximated 80 percent of the out-bound volume, in-bound air express shipments had constituted only some 25 percent of the out-bound movement.

By way of summary, United States overseas air cargo services developed slowly during the decade prior to World War II and by 1941 still represented a relatively small operation. High rates constituted one of the chief deterrents to wider use of the services, though it is probable that development of mail routes and passenger business overshadowed the promotion of express and

freight services and tended to prevent maximum development of the prewar air cargo potential.

(B) WARTIME DEVELOPMENTS

Entry of the United States into the war in December, 1941, marked the turning point in development of the nation's overseas air transport services. From a relatively small-scale commercial enterprise conducted by Pan American and its affiliates, the United States international air transportation system was transformed after Pearl Harbor into a world-wide network of air routes flown intensively by a number of American carriers under military contracts. Key personnel, equipment, and facilities supplied by commercial airlines constituted the nucleus for development of the Air Transport Command (ATC) and the Naval Air Transport Service (NATS); and, until 1944, the airlines' contribution represented the bulk of the total cargo activity of those two military air arms.

The scope of this report does not permit a detailed description of the conversion of the airline industry to a wartime basis or of the varied operations of the airline under military contracts. Only a few of the highlights will be noted.

First, the certificated airlines supplied much of the skilled personnel which enabled the Army and Navy to develop air services which eventually dwarfed the commercial airline system. Although the number of key personnel—trained executives, pilots, navigators, technicians and maintenance men so supplied was relatively small, it was of crucial importance in training additional personnel, furnishing leadership and advice, and occupying major positions in uniform.

Second, a large proportion of the planes operated by the airlines before the war were taken over by the armed forces. Before Pearl Harbor, a peak of 434 planes were being operated commercially by the airlines, divided as follows: domestic—358: transoceanic—

10; to Latin America—53; Hawaii—six; and Alaska—seven. On January 1, 1943, that number had been reduced to 256, of which 166 were flying domestically. The remainder were either used directly by the Troop Carrier Command, ATC, and NATS, or turned back to their original owners to carry military traffic under contract to the War and Navy Departments. Similarly, the airports, airways, terminal facilities, and navigational aids used by the airlines became available to the armed services.

Third, some 13 airlines, according to one investigator, engaged in international and territorial operation for the armed forces in addition to furnishing training, maintenance, and other services. Some of those airlines and others operated domestic military cargo services and participated in maintenance and plane modification activities. Only a brief description of the areas served by the 13 airlines operating overseas and some of their cargo activities can he presented here. Pan American routes served as the basis for the network of NATS routes in the Pacific. Contract operations for the Navy were conducted across the Pacific and to Alaska. Pan American's Alaska Sector carried 3,170,000 pounds of cargo to Alaska and the Aleutians in the 23-month period of its contract, September, 1942. through July, 1944. Some 20,000 flights were made during the war by the company's subsidiary. China National Aviation Corporation, across the "Hump" between China and India. In the early months of the war, those flights were China's only link with the outer world.

In transatlantic service, Pan American performed contract operations first for the Army and later, on a larger scale, for the Navy. Between May and December, 1942, the company carried approximately 2.239,500 pounds of cargo to Africa for the Army. On the backhaul, a critically important load was crude rubber. Pan American's Latin American Division operations were highly significant, but were not

(Continued on Page 15)

Planning the Air Freight Terminal

By L. R. HACKNEY . Air Cargo Sales Engineer, Lockheed Aircraft Corporation

PART III-

BASIC AIR FREIGHT TERMINAL LAYOUT

In the selection of a basic air freight terminal layout two prerequisites were constantly considered. First, that the arrangement be simple as possible commensurate with efficient and adequate facilities. Air freight, fortunately, does not require expensive and elaborate buildings and ramp areas. Unless the cost of the freight terminal facilities is held to an absolute minimum, the very purpose will be defeated. Every dollar expended in superfluous arrangements and facilities will increase the cost of handling freight across the dock. In each instance, every effort was made to utilize standard components. Building dimensions were chosen which would permit selection of standard truss sections, doors, etc.

The second prerequisite was to provide maximum ramp area and airplane loading stations for a given warehouse and dock area and still spot the cargo planes as close to the dock as possible. Studies of the few existing air freight docks reveal that at least three times as much ramp area is needed as compared to dock and warehouse area.

In confirming the latter prerequisite it will still be found that there are many air freight terminal configurations which appear to have merit. It is obvious that a hexagon, octagon, or circular grouping of buildings will meet this prerequisite.

Modified Octagon Plan: Figure 1 shows one of the first layout plans which was carefully evaluated in our series of studies. This is a modified octagon arrangement offering a unit type of terminal. It was assumed that each unit would be available for lease to an individual airline for their cargo operations.

Advantages:

- It provided an enclosed loading area for pick-up and delivery trucks.
 This feature is extremely important for air freight operators frequently have their aircraft damaged by pick-up and delivery trucks when they are allowed on the loading ramp area.
- 2. It permitted ready access between

units on the internal connecting dock for the handling and transfer of interline air freight. The amount of interline freight which is transferred between various operators has already reached a sizeable tonnage.

- 3. It permitted centralization of all freight activities thus allowing maximum interchange of loading crews as well as the consolidation of numerous other activities in the event it is desired.
- 4. It required a minimum of acreage for the layout.

Disadvantage:

Insufficient apron loading area for the spotting of airplanes, which allows only two airplanes to be spotted immediately adjacent to each loading dock, was practically the only disadvantage.

Modified Hexagon Plan: Figure 2 shows a modification to eliminate the major disadvantage of the arrangement shown in Figure 1. This is a modified hexagon offering only five units in lieu of eight. The additional frontage area adjacent to the loading apron plus modification to the basic unit and further spacing between units permits the spotting of three airplanes next to each unit.

Modified Tee Plan: Figure 3 might be considered a modified tee arrangement utilizing the same basic units shown in Figure 2. It provides an additional unit as well as space for a freight forwarding building.

Straight Line Plan: In Figure 4 a straight line arrangement of building units is presented. As this is an open layout, so to speak, it permits unlimited addition of units provided the soace on the terminal is available. Individual analysis which may be conducted by other terminal organizations in the future may indicate that one of the basic air freight terminal layouts shown in Figures 1 through 4 is better suited for their specific requirements. However, the results of Lockheed's studies indicate the following configuration to be the most efficient.

Lockheed Plan: While this arrangement, shown in Figure 5, still

adheres to the general circular grouping principle it shows considerable deviation in other respects.

Building Configuration and Arrangement: Prior to our final selection of a building configuration for what has been termed in this report as the basic "unit," careful attention was was given to the purpose of the structure—"that of housing and providing for the necessary materials handling equipment to efficiently receive and dispense air freight."

Floor Plan Considerations: For economy, only floor plans were considered which would permit the erection of either square or rectangular structures. Standard industrial dimensions were selected as to building width and length.

Rectangular: Figure 6 illustrates the utmost in sisaplicity. It is a plain rectangular structure, 50 x 200 feet. This would permit airplane loading from three sides and truck loading at the fourth.

Square: In Figure 1 it will be noted that the basic unit was a square building, 100 x 100 feet. However, to provide the maximum of frontal area adjacent to the airplane loading dock, the square building is at a disadvantage.

Modified Square: Figure 7 represents a decided improvement over the plain square structure through the simple expediency of adding smaller square structures which increase the frontal area for airplane loading. Provision of a large number of building corners is of definite benefit for it provides excellent loading points.

Rectangular Vee: It will be noted by Figure 5 that joining of two rectangular structurues at an angle to form an open Vee arrangement was our final selection. The buildings are two 50 foot x 100 foot structures rotated 60 degrees at the short side. This leaves an equilateral triangle 50 feet on a side which is covered to connect to two adjoining structures. This arrangement should be considered as a double unit providing the necessary (Cortinuel on Page 17)



REG. U. S. PAT. OFF.

WHAT had been removed for a long time came to pass last month when Slick Air-lines, instituted a \$30,000,000 damage suit against American Airlines, United Air-Lines, and Trans World Airline, charging the three hig carriers with a plot to drive Slick out of business. The Air Transport Association and Air Cargo, Inc., were also named in the neit.

According to the complaint, the three carriers are accused of setting freight rates considerably below costs, thereby forcing Slick to run into the red. It stated that AA, UAL, and TWA "were under no compulsion—legal, economic, or otherwise—of making a commercial or financial success of the air freight business, because they have other sources of revenue as well as mail subsidy. Included in the alleged conspiracy to drive Slick out. of business were "unlawful rebutes . . . threats to Slick customers, actual and potential, of serious business injury unless their accounts were transferred from Slick to one of the carrier defendants . . . the dissemination of false and misleading and harmful propagands and other destructive tactics."

Although the action claimed that \$10,000,000 in damages were sustained. Slick is asking

for \$30,000,000 under the law which provides for triple damages.

Representatives of American, United, and TWA, who were contacted at pressime by Am TRANSPORTATION, stated that their companies were studying the official text of the complaint and consequently refused to offer any comment at this time.

An of May 1, shippers in any part of the United States may ship via air express to Honolulu. This new service is the result of an agreement between the Railway Express Agency and Northwest Airlines which operates Stratocruisers between Seattle-Tacoma and Hawaii. Air express shipments to Hawaii may be sent prepaid or collect. COD service in also available.

REA reports that February air express shipments were 6.4 percent above the February, 1949 totals. More than 283,000 shipments weighing 5,436,000 pounds were handled that month in nationwide service.

The only one-carrier direct service between New York and Buenos Aires has been inaugurated by Argentine Airlines-FAMA. Intermediate traffic stops are at Belem and Rio de Janeiro, with refueling stops at Trinidad and Havana. Douglas DC6 equipment is used. North American representative of the airline is Licutenant Colonel Salviano

Ramon Herrera. It is understood that flight frequency will be stepped up within the next few months.

Another new direct nonstop service is Trans-Canada Air Lines Montreal-New York run. North Star equipment is used. The line has been serving New York from

Toronto for the past nine years.

According to a foreign air carrier permit granted TCA by the Gvil Aeronautics Board on March 14, authority has been given to fly between co-terminals Mon-treal and Toronto and Port of Spain, via Tampa-St. Petersburg, Nassau, Jamaica, and Barbados, Tentative schedules contemplate two weekly round trips between the Canadian points and Tampa-St. Petersburg. One flight will terminate at Nassau, and the other at Kingston.

Mark off August 19-20 on your calendar, and if you're out Oakland-way don't fail to attend the air freight clinic which will be sponsored by the Aviation Com-mitte, Oakland Chamber of Commerce, in cooperation with the Oakland Board of Port Commissioners, California Aeronau-tics Commission, the Air Cargo Institute of California, airlines, and aircraft manufacturers. This is the second such event sponsored by the chamber. The clinic will open at the Hotel Claremont, featuring business sessions and a luncheon. On the second day, the several hundred who are expected to attend will repair to Oakland Airport to take in the display and demonstrations of cargoplanes.

KLM Royal Dutch Airlines, whose cargo rates recently dropped some 30 per cent, reports the shipment of a 753-pound consignment from the Nurre Company,





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Milami International Airport, Twentieth Street Terminal Mines! 85-4328

140-2 West Brojadway, New York 13, N. Y. WOrth 4-3500

Bioomington, Indiana, consisting of two plate glass baskethall stops. Consignee was the baskethall team of the American School of Lasquages and Commerce in Intanbul. The shipment was flown on KLM's all-carge plane which departs from Idlewild every Saturday.

According to American Airlines' annual report, the company's operating expense per revenue ton-mile last year was 46.7 cents, lowest of all the scheduled airlines in the United States.

After five years' absence from the Caribbean islands of Martinique and Guadeloupe, Pan American World Airways will soon resume acheduled flights there. Service had been discontinued when Pan Am dropped its flying boats for landplanes. At that time the islands did not have any airfields.

The recently inaugurated air parcel post service between the United States and Japan guarantees a time-saving of three weeks over surfaceborne shipments.

Included in Pan Am's wide variety of air chipments are a 230-pound eea iton, flown from Miami to Argentina; two marmosets, eight arapongas, eix guaras, two urubus, 15 toucans, and 10 sairas, flown from Rio de Janeiro to Miami; the noted English raceborse, Royal Forest, airhauled from London to New York to Rio de Janeiro; and 33 steel flagpoles (12,112 pounds), from Beston to Caracas.

More than two hours' saving in elapsed time on flights between the United States and Bolivia is the result of Panagra's inauguration of JATO-equipped DC-4 service to La Paz. JATO (jet-assist take-off) units, which are fitted under the wings of the DC-4s, provide the extra power for landing and take-off operations at La Pac's high altitude airport. The new service has forced the retirement of the twin-engined DC-3a.

Through service between Salt Lake. City and Edmonton, Alberta, Canada, has been inaugurated by Western Air Lines. Four hours have been cut off the schedules. Convair-Liners are used on the run.

Contrasting with a net loss of \$787,-474 in 1948. Northwest Airlines came through in 1949 with a net profit after taxes of \$1,357,679. Cargo ton-miles shot up from 4,448,819 in 1948 to 9,138,691 last year; cargo revenues showed an increase of 78.5 percent.

Seaboard and Western Airlines' new tariff shows a 20 percent reduction in cargo rates since the international air freight carrier began operating three years ago. Vice President-General Manager Arthur V. Norden pointed out that the savings were brought about in the face of rising costs for fuel, services, equipment, etc. Accumulation of experience in a new field of transportation is what turned the

trick, he said. Further:

"A feature of the new schedule is the abandonment of weight breaks for specific commodities under which the shipper of heavier consignments received a progressively lower rate as the shipment weight increased. There is a minimum charge of \$15 per shipment. However, the weight break remains for general commodities, the rates for which are substantially higher than for specific commodities. There, the shipper continues to receive a rate approximately 33 per cent lower for shipments of 1,000 pounds or over than for shipments under 100 pounds."

(Concluded on Page 26)

Air Cargo Insurance



DOGGO STRATISTICS

When air cargo moves at three miles a minute—and every minute means money—then air cargo insurance service must move at the speed of flight, too.

But, as in aviation itself,—speed and precision in insurance service require years and years of practical experience and a world of knowledge. And a mind open to change?

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AIR FREIGHT FORWARDERS

ELSEWHERE in this issue will be found the official Civil Aeronautica Board regulations of international air freight forwarders, which became effective April 24, 1950. The CAB's opinion provided for the deferral of Railway Express Agency application, relating to overcome and foreign air transportation, pending the result of negotiations for the cotablishment of a new air express agreement. This is in conformity with the action previously taken in the domestic air freight forwarder case. The present examption of RIA to provide all air express services now offered to the public is continued. In its opinion the CAB satis!

"Although no definitive limitation will be placed upon the number of overseas and foreign air freight forwarders to be authorized, a screening process will be utilized to ascertain that only those applicants receive authorization who are found to must the requirements of the adopted regulations. Our experience in the domestic field irade un to believe that only a moderate number will qualify. This does not preclude the filing of new applications by other persons who may be interested in the industry and these will be given the counteraction in the light of this opinion and the established regulations."

It is pointed out that the new CAB permit limits forwarders to domestic cuttificated carriers and foreign air carriers, excluding the nonskeds from the field.

Member Harold A. Jones was the only dissenting one on the Board. Vice Chairmon Oswald Ryan did not participate.

The March issue of Air TRANSPORTATION

carried a full-page advertisement of Northwest Airlines which included a list of 21 domestic air freight forwarders with whom it was doing business. This was a rather susual innovation in airline advertising and consequently many an eyebrew was raised over it. We buttonholed Jim-Mariner, NWA's director of carge sales, and put the question to him. Here's the way Jim put it:

"In publicly usecognizing and soliciting

"In publicly recognizing and soliciting support of certificated domestic freight forwarders. Northwest Airlines is hopeful of encouraging more active participation in this field on the part of those forwarders who are now able to issue their own paper as indirect carriers. Also, that additional forwarding concerns will now undertake the investment in the development of volume domestic air freight traffic. Northwest now enjoys full support of the many IATA-approved freight forwarders who booked approximately 65 percent of our international business to Alaska and the Orient in 1949."

Lest anyone gets the idea that Northwest is plugging a few against the field, it should be pointed out that the airline's sympathies were with the forwarders at a time when recognition was a big question mark and most of the forwarders' activity was in Washington legal hattles. We asked several forwarders for their reactions to the ad, and nearly without exception they showed distinct enthusiasus. As one phrased it:

As one phrased it:
"Well, at least it proves that the airlines are beginning to view us as we really are."

• • • • • •

The Educational Group of the Women's Traffic Club, Philadelphia, recently heard an address by Charles J. Willimann on the subject, Air Transportation and Foreign Freight Ferwarding. Willimann was focuserly connected with Eastern Air Lines and Winged Cargo, Inc.

Industry news notes:

▶ Sun Transporters, Inc.: Frank E. Strastemeier has been named manager of Sun's European and Far Eastern Division, according to an announcement by Franklyn Sheps, president. Both the air and marine departments of this division will be developed by Strastemeier. His professional background includes affiliation, with Hollandeche Stoomhost Mij, Holland American



Another case of air carge coming to the rescue of a steamship is this four-ton rudder stock (shown above) which was flown from Boltimore to the Todd Shippards at Seattle where a vessel of the American Mail Line was laid up for repairs. The Seattle office of the air freight forwarding firm, Global Air Cargo, handled the shipment which was hould to the West Coast by the Flying Tiger Line. Global, which received the first call late Friday night, made arrangements for the pick-up in Baltimore as Sortedy marrings. Final delivery to the shippards took place Sunday marring. Overnight service meant considerable sarvings.

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ca Line, and KLM Royal Dutch Airlines. During the war he served in the European Theatre with the United States Arny. Sun is located at 45 White Street, New York.

b United Nations Shipping Corporation: This firm, located at 303 Fourth Avenue, New York, has been appointed official United States representative for the Fair of Padua, Italy.

▶ United Forwarders Service: Hans O. Tischer, president, has issued a survey report on air cargo agencies aid has come up with five recommendations, including (1) the airlines discontinuation of agency agreements "with all agents who have only an occasional air shipment;" (2) discontinuation of agency agreements with those forwarders who do not push the air cargo business and whose shipments are gathered "without effort of selicitation;" (3) limiting the number of agents "to a specified number per capita;" (4) increasing commissions from the present five percent to 10 percent, "with a minimum of \$1\$ commission per shipment, when the agent has issued the corresponding airwaybill;" and (5) doing away with the airlines "practice of issuing airwaybill;"

hills in competition with the agents, or that if they must no continue, assess a fee that would encourage shippers to avail themselves of the arvices of agents. The firm's headquarters are at 23 Beaver Street, New York.

b Peter A. Bernacki Interests: The Metropolitan Division, which is headed by William J. Kealey, has shown a very substantial increase in its domestic air freight hipments. Streamlined facilities at the company's new quarters at 140-2 West Broadvay, New York, have had their effect. Kealey reports the acquisition of two more men to the Metropolitan Division who will operate the maritime department: Howard Sharrott and A. Rosario, Sharrott has had wide experience in the transportation industry, and for free trars was connected with D. C. Andrews and Company, Inc. Rosario is the Division's Latin American expert, concentrating on Central and South American shipments.

Philadelphia headquarters of Bernacki report a sharp increase in air freight traffic to Central and South America and the Netherlands West Indies. Newest mesaker of the staff (also on the maritime end)

is Howard Hays.

U. S. OVERSEAS AIR CARGO SERVICES

(Continued from Page 10)

conducted under outright contract to the military. The company's affiliate, Panagra, performed contract cargo services for ATC in addition to commercial services. Its express revenue rose from \$207,000 in 1941 to \$1,108,000 in 1943, reflecting traffic increases stemming from disruption of steamship service between the United States and the west coast of South America and diversion of commercial traffic from the highly strategic air routes along that continent's east coast.

The domestic airlines also performed vast quantities of overseas service for the armed forces, Braniff and Eastern to the Caribbean and Latin American areas; American and TWA predominantly in transatlantic service; United to Australia and Alaska; Northwest and Western to Alaska; Northwest to Greenland and Iceland; Colonial to Canada; and American Export to the British Isles and Brazil. Three of those lines—American, United, and TWA—together with Pan American, performed a total of more than 20,000 transocean flights covering more than 100 million miles.

Table 4 indicates the wartime growth in air cargo transport and the contribution of the contracting airlines to the total volume of cargo service performed. It should be mentioned that,

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Recognized by: International Air Transport Association 35 S. William St., New York, N. Y. Phone: Whitehold 3-3330 while the greater part of the tonmileage shown in the table is accounted for by delivery of military supplies to and within combat areas, part of the traffic represents the transport of strategic raw materials urgently needed for war production in the United States. Examples are mica for insulation in radies and aircraft magnetos; quartx crystals for radio oscillators; tantalite for electronics and other purposes; columbite for stainless steel; beryllium for aircraft engines and essential copper alloys; industrial diamonds for special dies and cutting tools; and rare drages.

Table 4 (next issue) reveals that in the peak year 1945 the ATC and NATS performed approximately L1 billion ton-miles of cargo service (including mail), the greater part of which was overseas rather than domestic. The contracting airlines' contribution to the total cargo and mail ton-miles decreased from approximately 79 percent in 1942 to 15 percent in 1947. In 1944 the civilian airlines handled approximately 195

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million ton-miles of cargo and mail in world-wide service under contract to ATC and NATS, a total many times as high as the prewar volume of cargo and mail traffic moved by the Pan American Airways System. It is evident that the war provided the first real experiment with large-scale overseas air cargo service, and in the case of the domestic airlines, their first appreciable experience in transocean flying. Moreover, it is known that the tremendous expansion of air transport services during the war was accompanied by various types of advances which have proved of benefit to commercial airlines since the termination of hostilities. The following paragraphs attempt to outline briefly the major aspects of the contribution of wartime experience to the development of postwar United States overseas air cargo services.

The war demonstrated conclusively the feasibility of moving large quantities of a wide variety of goods by air in transoceanic service. It is true that transpacific express services had been conducted for several years prior to 1942, but the volume of goods carried

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was small and represented a small proportion of total traffic. Certain airlines, notably Panagra and Transportes Aeress Centro Americanos, S. A. (TACA), had performed a considerable volume of all-cargo service in Latin America before the war, but the distances flowe were qually relatively short. Until the establishment of a global network of air routes, many flights over which carried cargo exclusively, the quantitative and qualitative potentialities of the airplane as a transporter of commodities to foreign points were not fully realized.

Closely related to virtual discovery of the utility of air transport in transoceanic air cargo, service was the experience accumulated during the war in the operation of such services. The significance of that experience in enhancing postwar air cargo development can hardly be overemphasized. Train-

-International Fairs

Brussels: April 29-May (4

Poznan: April 29-May 14

Paris: May 13-29

Ismir: August 20-September 20

Barl: September 6-21

Visans: September 10-17

Utracht: September 2t-October 5

ing received by personnel of the military air services provided the incentive for organization of commercial air freight enterprises directed and staffed by skilled personnel. Illustrations of wartime experiential benefits were increased knowledge concerning transoceanic piloting, navigation, and communication; development of improved methods of cargo handling, loading, stowing, and unloading; advancements toward more economical packaging of air cargo; and improved aircraft maintenance methods.

In addition to knowledge and skills, new scientific products of value to

international commercial aviation were developed during the war. Notable among such products was Loran, now a standard navigational aid for longdistance over-water flights.

Another development of direct value to commercial aviation was the construction by the United States military forces of airports at many points throughout the world and the establishment of radio ranges and other aids to navigation at those points. Within two years after VJ-Day, most of those airports had been turned over to local governments with provisos that the respective governments maintain the airports in operation, make them available to all classes of aircraft, and conduct airport communications in English as well as in the local language. Thus United States flag carriers now have access to many more airports than would have been available before the war. In addition to construction of airports, improvements, such as equipping airports for night operations, were made by the United States and other countries.

(Continued Next Month)

GUEST EDITORIAL

(Continued from Page 7)

years will be reflected in mounting benefits to shippers.

This summer, with the delivery of five new DC-6a and the conversion of four passenger DC-6a into all-cargo planes, the daily cargo lift of United Air Lines will reach an all-time high of 675,000 pounds, Our Cargoliner fleet will consist of 11 DC-4s and 13 DC-3s. Further expansion of the total cargo lift will come early next year with delivery of six larger DC-6Bs.

This increased lift, combined with experience, enhanced standards of service and improved sales techniques, assures air cargo transportation of retaining its recognized position as America's fastest growing industry

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AIR FREIGHT TERMINAL

facilities for two freight operators or as a consolidated freight terminal.

Floor Area: Each wing of the Vee shaped building provides 5000 square feet of enclosed warehouse area plus necessary office space. With space for the handling of a maximum of four cargo transports simultaneously, it can be seen that 5000 square feet of enclosed warehouse area is far from excessive. Table A gives the total cargo floor areas as well as cargo volumes for various airfreighters. It will be noted that some of these airplanes contain over 1000 square feet of cargo floor area within their fuselage.

Volume: The required volume within the warehouse will seldom be a factor as the structures discussed have sufficient storage volume to assure a holding capacity more than equivalent to the normal airfreighter handling capacity of the terminal. The interior height of the warehouse must be sufficient to permit the use of fork-lift trucks within the building. The clearance must also be sufficient to permit installation of an interior drag line conveyor type system. Seldom is cargo loaded in an airfreighter higher than 61/2 feet. Therefore, it may be considered that ample floor area rather than volume inside the warehouse will be the critical factor.

Elevation Plan: The floor height of the freight warehouse and loading dock in relation to the airplane door level influences the cargo loading costs. At this point, the importance of selection of proper dock height cannot be too strongly emphasized. The increased cost of constructing a terminal with a high dock will more than be offset by the additional revenue which will return from an efficient and low operating cost facility. When considering floor height for the terminal structure three basic levels were evaluated, as shown in Figure 9.

Ground Level.—The terminal is constructed at ground level. With this arrangement all cargo must be raised by some mechanical means to both the airplane and the truck.

Truck Height Level—The floor of the terminal is raised to a height of approximately four feet from the ground or truck level height. This offers some advantage over a ground level installation, however, it would still require that cargo be raised to airplane floor level height.

Airplane Height - Selection of a floor level close to the height of the

floor level of the majority of the commercial cargo planes in operation today (and in the immediate future) greatly simplifies the floor loading problem. The dock chosen by Lockheed is located 100 inches above the ground. It will be observed from the door heights of the freight planes shown in Table B that this height permits nearly level loading of the Lockheed Constellation, Douglas DC-6A and DC-4, and the Curtiss C-46.

Roof Height: Roof height is not a serious consideration unless it is elected to extend the roof over the loading dock area. This has been done in the terminal chosen from our studies. In order to provide the maximum of covered aircraft and truck dock area, it was considered highly desirable to extend the roof to the edge of the respective docks. This was accomplished with cantilever trusses.

Loading Apron Layout: In surface transportation the railroad box car is located parallel and adjacent to the car loading dock. In truck transportation, it is the normal procedure to locate the rear end of the truck at right angles to the truck dock. In air transportation, spotting the airplane next to the airplane loading dock presents a problem due to the wings and tail surfaces. Extension of the wings over the loading dock area is both a dangerous and difficult practice for the surfaces are exposed to damage from fork-lift trucks and other movable equipment on the dock. To overcome this difficulty it was elected to spot the "Inner" positions as close to the airplane loading dock as possible without the wing tip extending over. The resulting gap was bridged with a loading ramp which is extendable and pivots from the dock side.

Location and Spacing of Cargo Plane Positions: The basic air freight terminal layout Lockheed has selected permits the location of four cargo planes around each wing, or a total of eight planes around a complete unit. As this layout will permit numerous combinations of airplane loading positions which can be readily accommodated with the extendable and pivotable loading ramp, it is difficult to recommend a standard loading position arrangement. Some operators will prefer to locate their airplanes parallel to the loading dock while others will choose to spot their airplanes at an angle. It appears preferable, therefore, to work out final airplane spotting positions after the construction of the terminal. It will be found that some operators will prefer to spot their airplanes by tractor, others will taxi FAST. CAREFUL. DIRECT



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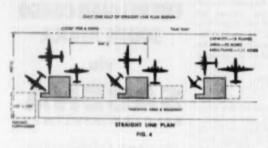
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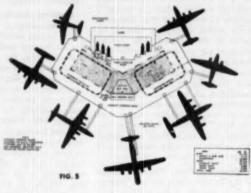
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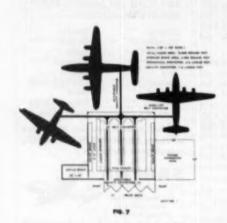
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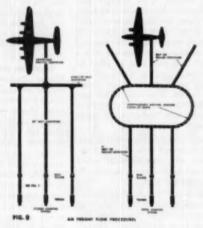
Various Aspects of the Modern AIR FREIGHT TERMINAL









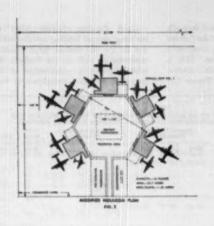


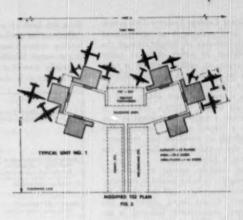
into position. This latter procedure will require caution in the event there are other airplanes in position as well as the chance of damaging light density air freight which is exposed to the

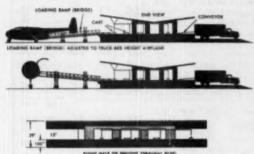
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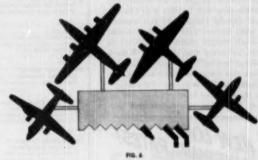
It is recommended that sufficient additional apron area be allocated outside the row of ramp loading positions to allow for a second row. Normally, these positions will only be used during emergency when the terminal would be operating at an overload capacity.

PAGE 18-AIR TRANSPORTATION-Air Commerce









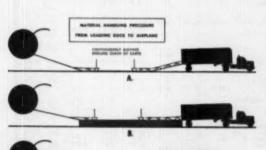
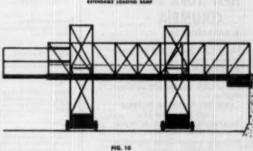


FIG. 9

FIG. SA



Material Handling: The material handling arrangement was closely coordinated with the overall terminal layout. The most efficient warehouse, loading docks, and ramp layout is of little value unless it is furnished with the proper material handling equipment. After studying existing methods of air freight loading, it was determined that basically two types of loading systems should be considered. One we have referred to as a "Closed Louding System" and the other, an "Open Loading System." Both are shown in Figure 8. Closed Leading System—This system has been considered an arrangement which transfers air freight through the warehouse by either skate or roller conveyors, an endless helt, or a combination thereof. A system involving roller conveyors or endless helts has been to date the most widely used by the air freight industry. However, it possesses a major disadvantage in that it to a "closed system," which makes it difficult to introduce late shipments into the us-called "pipe line" once the eystem is filled.

For example, assume an easthound airfreighter is being loaded at Burbank. Present procedures call for all of the Newark freight being placed in the forward compartment followed in order by the Chicago, Omaha and Denver freight. In other words, "last off" freight is loaded first. It is quite conceivable there will be instances when the Newark freight is all loaded and the conveyor belt is filled with Chicago. then Omaha freight. At this moment a truck arrives with some last minute Newark freight which it is desired to load on board the airplane. With a "closed system" it is not possible to place this cargo on board without disrupting the flow sequence of the freight on the conveyor line, or as an alternative, by-passing the system and han-

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Our studies disclose that the "closed loading system" normally requires a larger cargo handling crew. This is especially true if a multiple conveyor line is used as is shown in Figure 7. Open Loading System—After examining several loading systems which are in use by various large trucking concerns as well as the Railway Express Agency, a combination of the improved handling techniques of their

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Designs DC-6A "Liftmenter" Main comp commandered Formard loser cargo compartment Aft loser cargo compartment Total Designs C-N "Globouractor" Main copus commantered (1)								3,1
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Total Desigles C-74 "Giolomestor" 1 Main cargo consectment				21' 0"	6,0,	2' 6"	542 126° 160°	
Main rargo compartment		****		200.0			525*	6,1
Removed to make a comment more	131.3"	134" 2"	43" 9"	781.01	11:7"	**	873	6.1
Lot some a mount of combine combine common.			****	331.67	11.			
Conter lower cargo compartment.				8' 4" 9' 11"		****		1
Aft lower cargo compartment				0.00				1
Total		CORP. CO.	1111		1111			2,
Nan cargo compartment.	178' 8"	127. 3"	48, 3,	77'0"	13' 0"	12' 10"	800	10,
Auxiliary upper deck				40'*	13' 0"	1000	613	-
Total	MANUEL AND	77" 1"	27' 4"				1,415*	20,
Main cargo compartment (cargo hold).	106, 6,	11.1.	27. 4.	20' 0"	8' 8"	8' 5"	300	2,
Breat sentent							42	
Total Fairchité C-116 Packet	106" 0"	77.1*	207.4"	7114			551	2,
(improved version)	rine it.	re I.	2.4		**	8' 3"	351	
Main cargo compartment (cargo hold). Rear section					8.8.	8.3	28	3,
Youni .							379	3,
Lockhael C-121A All-Corps Constraintion		90" 1"		64' 12'	10' 9"		841	
Main cargo compartment				14' 7"	812	2' 6"*	200	
Aft lower cargo compartment				24' 9"	6.6.	2 000		
Total	1397 9"	110' 1"	28' 0"				718	4,
Main cargo compartment	120.0	100.5	22.0	88' 2"	10' 9"	27.14	744	
Forward lower cargo compartment Aft lower cargo compartment				28' 4"	6.8.	A des	198 178	
Total							1,006	8.
Northrop C-136 "Raider"	57.67	67'1"	31.64					
Main cargo compartment				39'3"(34'1)"	1 10, 0,	0.6.		1.

respective handling systems was selected. This is what we have termed the "Open Loading System." This system utilizes an endless overhead chain conveyor which is continually moving in an oval flow pattern. The chain conveyor, hung from the ceiling of the warehouse, tows both empty and loaded hand trucks at a speed of approximately three miles per hour.

Cargo is received from the delivery truck and off-loaded by gravity down a conventional skate or roller conveyor. A section of the conveyor is attached on a dial weight scale. Incoming shipments are then weighed, marked and transferred to the moving trucks as they pass by. It is the normal procedure to have trucks, marked with the various cities along the route, interspersed throughout the revolving drag line. There may be as many as eight to ten trucks receiving cargo for one city segregated throughout the endless eir-

Upon reaching the airplane dock side, the freight is either transferred to another roller conveyor and then into the airplane or the trucks are disconnected from the overhead chain convevor and wheeled over the extendable ramp into the airplane.

The "open system" expedites the sorting and distribution of freight. It allows interspersing of cargo at any time within the flow pattern. The improved handling technique affords an extremely versatile arrangement in that it permits selection of several different methods of handling freight through the system.

One such method is that just described. Another alternate would be to spot the cargo hand trucks on each side of the roller conveyors on the truck dock. The incoming freight from the motor truck would then be loaded directly onto the hand carts. As these carts are filled they would be hooked on the overhead chain conveyor, which is actually a movable storage unit. When the airplane is available for loading the hand trucks would be detached and pushed into the airplane. The hand trucks, which are used in conjunction with the overhead chain conveyor, are actually nothing more than pallets on wheels. The mast or trolley, an integral part of the hand truck, is constructed in three sections and is telescopic and can be retracted to a height of approximately 48 inches. This assures the passage of the hand truck through the airplane cargo doors with ample overhead clearance. Brackets are attached to the underside of the hand truck bed to receive the prongs of any standard fork-lift truck. The hand truck then becomes a pallet and is used in conjunction with a fork truck. For heavy or oversized shipments it may be found desirable to by-pass the materials handling system and load directly off the motor truck at the truck dock down the ramp and into the airplane. This operation would be handled by using the hand truck as a pallet and transporting it by a fork truck.

External Handling Equipment-In Figure 9 three possible material handling flow levels from truck receiving dock to the airplane are shown. Sketch C, which handles all freight at approximately airplane floor height. shows the level we have selected. The main link in this arrangement is provided by an extendable loading ramp (or bridge), shown in detail in Figure 10. This loading ramp provides the following features:

1. Extendable in Longth-Exact spot-

TABLE & CARGO DOOR SIZES AND HEIGHT ABOVE GROUND FOR VARIOUS MILITARY AND COMMERCIAL CARGO TRANSPORTS

		or Ope		
	Height Deer Sitt Above Ground	Height or Breadto Fwd. Aft	Widen or Largth	Location
Bosing C-87 "StrateFeighter" Main cargo opening Forward lower cargo compartment door Base lower cargo compartment door	0' 0" 4' 10" 4' 8"	8' 8" 8' 11" 8' 8" 8' 11"	11' 11" 3' 10" 2' 11"	Buttom fundage—renr Lower left side—forward Lower left side—aft
Chase G-121 "Avitrue" Main cargo opening (ramp)			7' 9"	Bottom fuelago-rear
Chase C-122 Main cargo opening (ramp)	0.4.0	****		Bottom fundage - rear
Carties Wright C-48 "Commander" Main cargo door Forward belly compartment cargo door Roar helly compartment cargo door		8.14 8.24 2.64	8' 6" 3' 8" 3' 8"	Left side—aft Lower left side—forward Lower left side—aft
Douglas DC-3 Main cargo door Rear cargo door	4' 6"	4.8.	Y 1"	Laft side - aft Laft side - aft
Douglas C-47 "Skytrain" Main cargo dour		N 3"	8.00	Left side-aft
Desgine C-84 (DC-4) "Skymanter" Main cargo door Forward belly compariment cargo door Rear belly compariment cargo door	L 6	2.6.	T 9*	Loft side—aft Lower loft side—forward Lower loft side—aft
Deuglas DC-8A "Liftmaster" Main cargo door Forward cargo door Forward belly compartment cargo door Roos belly compartment cargo door	7'00"	*** ***	10" 4" 1" 7" 3' 1" 3' 1"	Left side—aft Left side—forward Lower left side—forward Lower left side—aft
Desgins C-N "Gishemuster" Main earge elevator opening. Forward main earge door		11' 8"	11'-6"	Bottom Inselage aft of wing Left side - forward
Deuglas C-124 Main eargo door Elevator opening		11' 9"	11' 4"	None Buttom fundage oft of wing
Fairshihi C-62 Packet Main cargo door Forward cargo door	10	K. P.	8' 8"	Had-rear Left side-forward
Fairshild G-119 Packet (improved version) Main cargo door Forward cargo door	4'0"	6. 9.	1.17.	Rind-rear Left side-forward
Lackheed G-121A All-Garge Constellation Main carge door Forward befly compartment ourge door Aft befly compartment carge door	7 11 ***	6, 0, 1, 10, 3, 0,	7 1°	Left side-aft Nose wheel well Bottom frankage-aft
Lackheed MR Cargo Constitution Main cargo door Forward cargo door Forward body compartment cargo door Aft belly compartment cargo door	10' 0" 10' 0"	6' 0" 6' 0" 1' 10" 2' 6"	3, 8, 3, 8, 8, 0, 0, 1,	Left side—aft Left side—forward Nose whost well Buttom fundage—aft
Northrey C-125 "Ruider" Main cargo door (ramp)		6.4.	0'0"	Bottom fossings-rear

Note: 1. Asterisks donote figures which are either estimates or a varified.

2. Where spaces are blank, information was not available. too, and their accorney has not been

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- chief spokesman for the sizered industry.

 8 This new book points the way for the sictine transport industry to forge shead under relevant management and erfer management and erfer on a progress of the saturative experience and the extensive respective of the saturative experience matter, concepts, straingy, policy, and either which have distorted the man who formulated and developed the set of flight. He shows how the United States can utilize commercial evidence in the set of t
- of Managama of conservation as present of the personalities on era; Calvin Coolidge, F. D. R., General "Blitchell, Admiral Moffast, James Forres Charles A. Limbergh, Walter Routher, E. Richenshacher, Dreight Moreau, Bill Knod, Ridney Hillman, Igor Sikorsky, and Glenn, R. Lin, You are told how those now made it mark on American systems, and you get could information on the important events arising aver the last quarter-contary.

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ting of the airplane is not necessary. This feature permits adjustment of the ramp to the required length.

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 Pirotable through 180 degree are from airplane dock side. This allows the airplane to be spotted at various anglee other than parallel to the airplane loading dock.

4. Morobie to any desired location along the airplane loading dock. A track is provided in the front face of the airplane loading dock allowing the extendable ramp to travel along its length.

5. Dual Material Flow Provisions— The ramp is equipped with sections of roller conveyors attached to one side of the guard rails. The conveyor can either be left in position to handle freight or swang against the side thus clearing the ramp floor for hand truck use.

CONCLUSION

It is recognized that the features of the air freight terminal Lockheed has selected are tailored to the handling and loading requirements of the cargo transports with high cargo floors. Our decision in this case was influenced by the fact that practically all commercial cargo transports in operation today and in the near future will be of this type. Therefore, to offer the most efficient facility to load these airplanes, their basic loadability features were given first consideration. It is to be expected, therefore, that the dock is higher than necessary to accommodate an airplane with a truck level floor. However, with light modification to the external cargo handling equipment this type of cargo transport can be accommodated.

It is hoped that this study will accomplish its aim and stimulate the interest and thinking in air freight terminal requirements. It may be that coordination with the military services will indicate that it would be wise to compromise some of the features which we have adopted in order to provide a terminal that will readily meet the needs of all. Only further study and cooperation by all interested in this subject will provide the answers to this question.

It is felt that all cargo experts are unanimous in recognizing the urgent need to mechanize every possible operation of cargo handling in order to obtain maximum economy and to expedite loading procedures.

THE END

EUROPE'S AIR ROAD

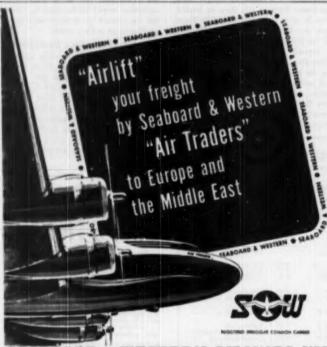
up the visits with models or samples, and then come through with rapid deliveries of the moderate quantities the American buyer will probably require in each shipment. He can thus remove the feeling the domestic merchant often has—that he is "choked un" with

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foreign goods and that he is taking something of a gamble. He can become all of a piece with the rest of the buyer's operation, and not a thing apart.

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May 1953-Page 23

Official CAB Regulations of

INTERNATIONAL AIR FREIGHT FORWARDERS

(Effective April 24, 1950)

Definitions

Definitions

§ 257.1 Informational six freight forwarder.
An "informational air freight forwarder" shall be defined to none any extens of the United States which engages indivenilly in overseas or foreign air transportation of property only and tissue and rangage directly in the special colors and rangage directly in the special new orders of aircraft in air transportation, and which, in the orders and exceeding and consolidates or provides for assembling and consolidates or provides for assembling and consolidating such property, or presentation of publication of the colors with respect to each amountaining continues with respect to each amount of corrections with respect to each modificated abjunction, or both, in assumes responsibility for the transportation of each property from the protection of configuration of each property from the protection of conductions of the whole or any part of the transportation of out of proving air carrier subject to the Act.

Classification and Exemption

£ 597.5 Classification. There is hereby established a classification of air carriers to be designated as "international six freight forwarders," which emaists of all international air freight forwarders as defined in £ 397.1.

he resigns town-rows as defined in \$27.1. \$297.7 Exemptions limbject to the other provisions of this Part, international six freight forewarders which are within the classification established in \$297.6 are hereby retired from the provisions of Title VI of the Act, and from the following provisions of Title IV of the Act;

ini Subsection 491(a);

(b) Subsection 484(a) only incofer as it re-lates to juint raise, form, and charges, and divisions thereof;

(c) Sebection 465(e);

(c) Subsection 400(c); Pravided, That no goverlaim of any rule, regulation, turm, condition or listifation prescribed pursuant to subsections 407(u) or (d) shall be applicable to such forwarders unless such rule, regulation, term, condition or limitation enterprised to granted become, international air freight forwarders are enhanced to all previations of the Act and regulations inseed pursuant thereto to the entent that such providens are by their terms andicable. by their terms applicable

by thour terms applicable.

§ 207.4 Brazifon. The temporary authority provided by this Part shall continue in effect until such time as the Board shall find that the exemption accorded herein in no longer in P public interest, but in no event longer than 5 years and four months from the effective date of the Part.

Limitations and Conditions

\$191.11 Use of aircraft. In respect to operations conducted pursoant to the authority provided in this Part no international air freight forwarder shall ship property by air to enversees or fereign air transportation except upon aircraft operated in scheduled concept upon aircraft operated in scheduled con-

PART 297-INTERNATIONAL AIR FREIGHT FORWARDERS

International Air Freight forwarder.

Classification and Exemption

Limitations and Conditions

Use of aircraft. Probibition on on operation unless tartific are observed. Retention of cortain officials prohibited.

Letters of Registration

eccenity for Letter of Registration. issuance. Effective period. Bestrictions on issuance. Hontransferability.

Incurance

Cargo. Public liability and property damage.

Payment of transportation charges. Non-applicability. Separability.

men carrier corvice by air carriers or foreign air carriers under certificates of public con-venience and necessity or under foreign air carrier permits iscosed by the Board.

reasone and meconity or under fereign air carrier permits housed by the Board.
§ 297.12 Prohibition on operations unless tariffs are elserved. Mo international air freight forwarder shall ship property on an air carrier for neverence or foreign air carrier transportation unline it pays the direct air carrier or foreign air carrier transporting such property the rates and charges operfield in the curvestly effective tarific of much direct air carrier or envesting effective tarific of much direct air carrier or protein air and the man and collect, accept, or receive, in any manner or by any device, directly or indirectly, or through any agent or receive, in any manner or by any device, directly or indirectly, or through any agent or broker, or otherwise, any portion of the rates or charges as specified in the tariffs of such direct air carrier or foreign air carrier, and shall not demand, cancept, or receive, either directly or indirectly, any privilege, service or facility except those specified in the carrier of foreign air carrier, § 397.13 Butestim of certain officials pyeficials.

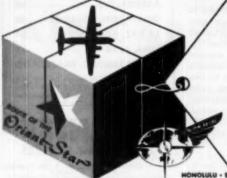
shall have or retain, so an owner, partner, officer, director or stockholder holding a controlling interest, any person who was, or is international air freight forwarder, air freight forwarder, or irregular air carrier if the letter of registration or emengtiss privilege of such carrier or forwarder was expended or revoked by the Board on account of acts or omissions which occurred during the time of such estimated by such forwarder, and the Board by such forwarder, and the Board finds, that the public interest and such forwarder intestion and shillify to canform to the previous of the Act and requirements thereunder will not be adversely affected thereby.

Letters of Registration

§ 297.16 Necessity for Letter of Registra-ties. No person shell engage in overmen or foreign air transportation pursuent to the exceeption granted by this Fart union there is in force with respect to such person a letter of registration issued by the Beard pursuant to this part.

is in force with respect to such person a letter of registration based by the Beard pursuant to this part.

§ 297.17 Application. Any person other than those specified in § 297.22 desiring to engage in operation as an international sir freight forwarder may apply to the Board for a letter of registration purvainant to this part. Buch application shall be mulmitted in duplicate in letter forms, shall be certified to by a responsand shall centrain the following information: (a) date: (b) name of international air freight forwarder; (c) mailing address; (d) location of principal office; (e) if a corporation, the state of incorporation, the name and citizenships of officers and discretive and a statement that at least 75 percent of the voting interest that at least 75 percent of the voting interest that at least 75 percent of the applicant; (directly or indirectly, 1 percent or more of the United States or one of the processions; (f) the names of the largest stockholders, not exceeding 90, who hold, individually, directly or indirectly, 1 percent or more of the voting capital tock of the applicant; (g) if an individual or partnership, the name and citizenship of the owner or partners, and a financial state grant of corporation, or considerable of the voting capital tock of the applicantic information for partnership, the name relating to the transportation of cargo by aircreaft, to distinguish between agency and forwarding activities and a separation of expected the voting the types and amounts of insurance, which is in force for the protection of the filling the types and amounts of insurance, which is in force for the protection of the filling the application; and a statement of specific points in foreign covarient of the protection and the pass of the insurance of the insure or other repairs and the pass of the insurers; (i) in statement of specific points in foreign covarience, agents, affiliates, or other repairs.



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AIR CARGO specify Only P.A.L. provides dependable DC-6 service direct to Manila. Sun Francisco to Manila in only 36 hours total time, with connections to major Orient cities and weekly service to India, Israel and Europe.

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resentatives presently under contract; a list and insention of branch offices and agents in the United Steten, its territories and penessions; a customent whether the applicant is or has been a custome bessel bruker, and if on, the districts whereign such activative or has been a custome beause bruker, and if on, the districts whereign such authority is or has been hold; a statement whether the applicant is or has been an international Air Transport Association agent, and if on, the order of the district of customizes project from each outline of customizes repeated from one has positive; a datement whether the applicant is or has been a surface carriors with which he dealt in the custom of the customizes of the customizes

piteant's activities as may be visuatarity susmitted to or requested by the Beard with
respect to any individual application.

§ 207.13 hisosanes. (a) If, after the filing
of an application for a better of registration,
for appears that the applicant of expander of
appears that the applicant of expander of
consider, and of conforming to the provisions
of the Act and rules and orquirements thereunder, and that the conduct of such operations
by the applicant will not be inconsistent with
the public interest, the applicant will be assisted
and advised that upon the filing of a valid
tariff a letter of registration will be issued
to such applicant. Subject to the restrictions
invided percis and upon for receipt by the
tration shall forthwith be issued to the applicant. If it appears that the applicant will not be
consistent with the public interest, the Board
shall by letter notify the applicant to that
effect. The Board may disense any such application unless within 36 days of the date of
the mailing of such letter, the applicant has
ench additional information as it believes will
make the necessary showing, or requested that
the application be assigned for hearing, in
which case the applicant ahall outlines the
revidence to be presented at each hearing as the
hall show the noed for learning in order to
properly present the case.

(b) In the event that reconsideration is represented.

properly present the case.

(a) In the event that reconsideration is requested, additional information is subswitted, or the Board finds that no sufficient need for a hearing has been shown, the Board may, without notice or hearing, enter an order of approval or of disapproval in accordance with its determination upon the showing made, or on its own initiative may assign the application of the continuous continuous

port and expect shipmeets, with reasonable effectiveness for the hendelt of the shipping institie.

(b) An application filed pursuant to § 297.17 will be decided and no inter of requireration will be instead to an applicant which has, or will be instead to an applicant which has, or director, or stickholder holding a controlling interest, any secton who was, or is connected in any such capacity with an irregular air carrier, an air freight forwarder or another international air freight forwarder, if the letter of registration or examption privilege of such carrier or forwarder was suspended or revoked by the Board on account of acts or monaclom which occurred during the time of such connection, unless if has been shown to the Hound by such applicant, and the Board fields that the public intervet and applicant's lotsertion and ability to conform to the privilege of the Art and requirements thereunder will not be adversely affected by such under will not be adversely affected by such under will not be adversely affected by such under will not be adversely affected by anch

§ 297.31 Nontransferability. A lotter gistration shall be nontransferable and a offsetive only with respect to the peatered therein.

he observed only wish respect to the continuation of heavies.

§ 297.3 Suspension. Letters of registration shall be subject to immediate compounts on when in the opinion of the Board, such action is required in the public instruct. Letters of registration chall be further coulect to compension open consupplaint, or upon motion of any persistration chall be further coulect to compension open complaint, or upon motion of any persistration chall be further coulect to compension of the further produced in the continuation of the proceedings, for failure to comply with the provisions of the Act or with any order. Futer regulation issued thereunder supply the continuous conditions or limitation of any authoriti amount the board dust that care supposed international air freight forwarder has complied with the provisions of the ferrom, conditions, or limitations. Failure to neek rein statement of a letter of registration compensed puresuant to the provisions of this paragrap



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within a period of 2d days after the effective date of such compension shall automatically terminate the effectiveness of such letter of registration, and such letter shall cease to be

1 227 23 Reveration.

§ 297.20 Meveration.

(a) A totar of registration shall be subject to revessition, after notice and bearing, for knowing and willful violation by the holder thereof of any nuvision of the Act or of any order, rule, or regulation inseed under any such prevision or of any term, condition, or limitation of any authority is a subject to the Act or or of any term, condition, or limitation of any authority issued under anid Act or regulations.

Act or regulations.

(b) A letter of registration shall be subject to revocation, if the Board Sinds, after notice and hearing, that the international air freight forwarder has accepted any relate, refund, or remittance, or any compensation or remineration, from any direct air carrier or fureign air carrier with respect to any transaction wherein such forwarder note no consignor or enoughness, or otherwise participates on an international air freight furwarder.

international air Freight turwarder, (e) A letter of registration shall be reveled without prejudice upon the filing by an inter-national air freight forwarder of a written notice with the Board that such forwarder has discontinued common carrier activities. national air freight forwarder of a written notice with the Board that such forwarder has discountinued assessment marries activities, together with a tender of the letter of registration for consculiation; Previded, That the Board may refuse to accept such action or to the letter of registration for consculiation; preventing or action is pending in which such forwarder's authority may be active or any international air freight farwarder to operate any international air freight farwarder to operate any international air freight forwarding services for a period of acceptance of failure for two successive periods to file the periodic reports required by this Chapter may, for the purpose of this part, he deemed by the Board to constitute the filing of written notice indicating the discountinuance of the common carrier activities, and in such sease the tender of the letter of registration shall not be necessary.

Insurance

§ 987.00 Carge. No informational air freight forwarder shall engage in air transportation pursuant to this part unless the risks of less of or dismage in the property on transported by it are covered in the amounts prescribed in § 987.381 at by insurance, a self-insurance fund of venture, or surely kinds.

§ 207.27 Public liability and property dam-

shall engage in the performance of transfer, collection, or delivery nervices under the previous of the part unions risks of hodily inproperty (other than pruperty evered by 197.28) resulting from the negligent operation, maintenance, or use of motor vehicles operated by it or under its direction and control, or resulting from each of ragents, employees, and representatives in the performance of such transfer, collection, or delivery services are current to the entent that legal in §197.28(b) and (c) by insurance, a self-insurance fund or reserve, or surety bond. 1 297.28 Minimum coverage. (a) Cargo, For lune if, or damage to, property while carried on or resting to any one conveyance—\$6.099.

(b) Public liability property. For loss or damage to property occurring at any one time or place—\$2,600.

of Posses—Fa, ver.

(e) Public lishility—personal injury. Claims
for hedily injury or death—\$10,000, for one
person subject to that limit per person, and
for all persons in any one accident—\$20,000.

§ 297.31 Payment of transportation charges. Freight bills from direct air carriers and foreign air carriers for all transportation charges shall be paid by every international air freight forwarder within a reasonable period after the rendering of the transportation services. A reasonable maximum period for some period of the transportation period for the period of the period o

after being hilled therefor.

£ 207.20 Nonapplicability. This Part shall not apply (a) to any air carrier authorised by a curificate of public convenience and necessary to engage in air transportation, nor (b) to any non-certificate air carrier engaged in air transportation pursuant to any special or individual acception order granted by the Board, nor (c) to any non-certificated air carrier engaged in direct air transportation pursuant to any special content of the purpose of the content of the purpose of the content of the purpose of the Chapter.

by any other part of this Chapter, § 207.33 Superarbility. If any provision of this part or the application thereof to any air transportation, presson, class of persons, or circumstance is held invalid, the remainder of the part and the application of such previous to other air transportative; persons, classes of persons, or circumstances shall not be affected thereby.

AIR COMMERCE

The 19th National Packaging Exposition and Conference on Packaging, Pack-ing and Shipping was held at the Navy Pier, Chicago, on April 24-27.

The conversion of four The conversion of four passenger DC-4s and the delivery of five DC-6s will up United Air Lines' daily cargo capacity record high of 675,000 United's all-cargo fleet (exclusive of com-

United's all-cargo fleet (exclusive of combination passenger-cargo planes which form the bulk of the fleet) will reach a total of 11 DC-4e and 12 DC-3e. It may be hard to believe, but bloodworms are among United's cargoes these days. Approximately 35,000 Maine bloodworms bree been flown down to California. They're packed in seaweed, 250 to the box. the box.

The Flying Tiger Line has conthrough with two more interline freigh interline freight agreements with the following carriers: Trans-Canada Air Lines and Air France. The agreement with TCA is viewed as an especially important one for FTL because it opens a new direct connection with the Canadian market.

Aiming at new records, FTL set an all-time high in February. Freight billing came near to the \$250,000 mark. Accord-ing to George T. Cussen, executive vice president, FTL's November, 1949-February, 1950, business is shout equal to the total freight business of the company during the 12-month period last year. Service has been extended to Toledo, Akron-Canton, and Philadelphia. . . .

Did you know that last year Douglas Aircraft Company opent a total of \$378,000 for the air transportation of freight, passengers, and mail? And of the three categories, air freight was tops with \$185,000 spent.

TWA will get its first of 30 40-4s or-dered from the Glenn L. Martin Company about 10 months sooner than expected. The airline has leased a dozen 2-0-2s from Martin for delivery starting in July. They will supplement TWA's fleet of 61 Constellations.

Sabena Belgian Airlines reports that it will receive additional DC-60 in June. These will increase the line's transatlantic flights to six round trips a week. . .

Central Airlines, Fort Worth, Texas, has asked the Civil Aeronautics Board for authority to fly mail in helicopters in the Dallas-Fort Worth area. . . .

Even though March, 1949, was a record cargo month for TCA because of the REA cause of the REA embargo, total cargo flown out of New York to Toronto and points in Western Canada during March, 1950, exceeded the corresponding period by 26 percent.

Air Associates, Inc., Teterboro, New Jersey, and the Snyder Aircraft Corporation, Chicago, are merging their operations.

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international Air Transport Association
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Phone: TRafaigar 4-5158

HIPPING * * * AIR

International Cargo Rates

(including U. S. possessions and territories)

- Air cargo rates quoted are tassed on preventing sarrila, any-pert to arrayer (one rate). However, that these rates are onlined to the property of the same of the same of the same All international rates are quoted on an airport-to-obspact service, with the pickup and delivery charges wholly apart. Air carriers whose relocation and rates are included lares are inclinated by the lotter following the airport symbol (see below).

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BOSHoston	MPS-Minneapolin-lit. 1	-
BRO-Brownerillo, Tex.	MOS-Mobile	
BTVIbrlington, Vt.	(A Montreal	
CHS-Charleston, S. C.	MESY-New Orleans	
OHI Chicago	LGA-New York (La G	nin
CLE-Cleveland	1Dt New York (Lilley	dia:
CRP-Corpus Christi, Tex.	EWR-Newark	790
CTB-Out Bank, Mont.	ORF-Norfolk	
DAL-Dal'as	MLD-Nurvo Laredo, N	line.
DEN-Deaver	OAK-Oakland, Culif.	77
YIP -Ostroit	PUK-Poducah, Ky.	
DLH Duluth	PtA-Pooria, El.	
ELD-El Dorado, Ark.	PHL - Philadelphia	
ELP-El Pass	PYY - Pitteburgh	
EVV-Evaneville, Inc.	POX-Portland, Or.	
FWA Fort Wayne, Inc.	PVD Providence	
FWA Fort Wayne, Ind. FTW Fort Worth	OV Series V 9	
	QY Sydney, N. S. STL St. Louis	
	SLC -Sult Lake City	
GRW-Greenwood, Miss. BDL-Hartford	BAT COME LARGE CITY	
HAV - Haven	SFO San Francisco	
	SFO San Francisco	
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HOU Houston	SEC -Scattle	
HJR Henolulu	SHV-threvepirt, La.	
IND Indianapolis	GEG Spokane, Wash,	
JAN Jackson, Miss.	8GF - Syringfield, Mo.	
JAX Jacksonville	TPA-Tampa	
MKC-Kansse City, Mo.	HUF Torre Haute, Inc	le.
KIN Kingsion, Jam.	YOL.—Toledo, Ohio	
	WWG Connector Cloud	

- LRD Laredo LST Little Rock, Ark-LAE Los Angeles
 - APPLINE SYMBOLS
 - AFA. INELINE SYMBOLS

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 SPEGIAL SOVES

 COMMODITY BATES: Apply to airlines.
 AG: Valuation charge is applicable only on chipmonts with a valuation of ever \$7.48 per peanel. Minimum charge is no for 2 kibn (4.4 lbs.).

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 L: Shipments of less than 22 lbs. are sent air express.

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 Full results of less than 12 lbs. are sent air express.

 Full results of less than 12 lbs. are sent air express.

 Full results of selection in the Philippines served from Manila by PAL (where routing is via PAL frees San Francisco) add 104 per pound to rates shown as applying to Massils.

 SK: Lower rates for cargo of 2,000 lbs., gross weight and over. Flanciscad service minimum is 15,000 lbs. Minimum weight charge of \$2 on all delipsoments.

 SK: Sweet and the service minimum is 15,000 lbs. Minimum weight charge of \$2 on all delipsoments.

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 **PATE SYMBOLS*

 **This involves onward entriage by another airline.

 **Per \$1.0 (Canadian Currency) value, pre-rate.

 **Ref \$1.0 (Canadian Currency) value, pre-rate.

 **Another \$1.0 (Canadian Currency) value, pre-rate.

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 **Minimum weight \$0 fine.

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